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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/384,675	08/27/1999	GREGORY B. ARNOLD	M-617	8146

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EXAMINER

FUREMAN, JARED

ART UNIT PAPER NUMBER

2876

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/384,675

Applicant(s)

ARNOLD ET AL.

Examiner

Jared J. Fureman

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 73-76 is/are allowed.
- 6) ☒ Claim(s) 37-67, 69, 70 and 72 is/are rejected.
- 7) ☒ Claim(s) 68 and 71 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/27/1999 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Receipt is acknowledged of the amendment filed on 8/23/2002, which has been entered in the file. Claims 37-76 are pending.

Drawings

2. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see page 3, lines 8-9, and page 4, lines 19, 20, and 28, wherein the specification teaches that print module 34 is a prior art print module). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 37 and 47 are objected to because of the following informalities:
Claim 37, line 6: "date" should be replaced with --data--.
Claim 47, line 2: "the" should be replaced with --a--, in order to avoid a lack of proper antecedent basis for "the printer circuit board".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 37, 51-54, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al (US 5,047,615, previously cited) in view of the admitted prior art and Sherman et al (US 5,186,558, previously cited).

Fukumoto et al teaches a hand-held printer (3), comprising: an elongate printer housing having a portion to receive the palm of a user's hand (the bottom of the housing), the housing having a front portion and a rear portion, the printer housing including a compartment (7) to embrace a portable data entry device (1), the housing providing space for mounting a roll of a printable web (as can be seen in figure 1, the printer housing includes tabs which receive and support a roll of label web (6)), a thermal print module (45) at the rear portion of the printer housing, the compartment having an open top to provide access to the portable data entry device, wherein the printer housing length is at least twice as great as the width, a hand-held printer in combination with the portable data entry device (see figures 1-5, column 1 lines 8-15, 23-36, 43-49, column 1 line 60 – column 2 line 3, and column 2 line 39 – column 4 line 23).

Fukumoto et al fails to specifically teach a platen roll at the rear portion, the print module including thermal print head cooperable with the platen roll for printing on the web and an electric motor for moving the platen roll, wherein the platen roll is pivotally mounted toward and away from the print head, wherein the housing includes a cover, and wherein the platen roll is pivotally mounted to the cover, wherein the platen roll forms part of the print module.

However, the admitted prior art teaches a print module (34) comprising: a platen roll (45), the print module including thermal print head (38) cooperable with the platen roll for printing on the web and an electric motor (47) for moving the platen roll, wherein the platen roll is pivotally mounted toward and away from the print head, wherein the housing includes a cover (52), and wherein the platen roll is pivotally mounted to the cover, wherein the platen roll forms part of the print module (see figure 7, page 4 lines 18-20, page 4 line 28 - page 5 line 21)

In view of the admitted prior art's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al, a platen roll at the rear portion, the print module including thermal print head cooperable with the platen roll for printing on the web and an electric motor for moving the platen roll, wherein the platen roll is pivotally mounted toward and away from the print head, wherein the housing includes a cover, and wherein the platen roll is pivotally mounted to the cover, wherein the platen roll forms part of the print module, in order to provide a compact, conventional, print module.

Fukumoto et al as modified by the admitted prior art fails to specifically teach the printer housing including a channel and flanges at opposite sides of the housing, an electrical connector on the housing for connection to the data entry device, the connector being disposed between the front portion and the roll-mounting space, a releasable latch to latch the portable data entry device in the compartment of the printer housing, the compartment having an open top between the flanges, the compartment

being open at the end of the front portion to enable a portable data entry device to be slidably received through the open end.

Sherman et al teaches a printer housing (16) having a front portion and a rear portion, the printer housing including a channel (39) and flanges (45) at opposite sides of the channel housing to embrace a portable data entry device (40), an electrical connector (135 having contacts 140) on the housing for connection to the data entry device, the connector being disposed at the end of the channel away from the front portion, a releasable latch (42) to latch the portable data entry device in the compartment of the printer housing, the compartment having an open top between the flanges, the compartment being open at the end of the front portion to enable a portable data entry device to be slidably received through the open end (see figures 1, 5, column 3 lines 56-65, column 5 lines 1-32, column 9 lines 24-29, 43-46).

In view of Sherman et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al as modified by the admitted prior art, the printer housing including a channel and flanges at opposite sides of the housing, an electrical connector on the housing for connection to the data entry device, the connector being disposed between the front portion and the roll-mounting space, a releasable latch to latch the portable data entry device in the compartment of the printer housing, the compartment having an open top between the flanges, the compartment being open at the end of the front portion to enable a portable data entry device to be slidably received through the open end, in order to provide a compartment wherein the data entry device can be inserted

and connected in a single motion (as compared to the system shown in figures 1 and 2 of Fukumoto et al, which requires tilting, sliding, and dropping the data entry device into the compartment), thereby providing a more ergonomic system.

6. Claims 38-42 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al as modified by the admitted prior art and Sherman et al as applied to claim 37 above, and further in view of Hanson (US 5,541,398).

Fukumoto et al as modified by the admitted prior art and Sherman et al fails to specifically teach the palm-receiving portion being contoured and concave, a strap adjacent the contoured portion, wherein the palm-receiving portion of the printer housing is concave between the front portion and the rear portion, a strap connected to the printer housing and capable of passing around the back of the user's hand, wherein the palm-receiving portion is disposed between the front and rear portions.

Hanson teaches a hand-held device (14), comprising: a housing (19) having a portion (20) to receive the palm of the user's hand, the palm-receiving portion being contoured and concave (see figure 1), a strap (33) adjacent the contoured portion, wherein the palm-receiving portion of the housing is concave between a front portion and a rear portion of the housing (see figure 1), the strap being connected to the housing and capable of passing around the back of the user's hand, wherein the palm-receiving portion is disposed between the front and rear portions (see figure 1, column 5 lines 4-8, 57-61, and column 6 lines 30-35).

In view of Hanson's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto

et al as modified by the admitted prior art and Sherman et al, the palm-receiving portion being contoured and concave, a strap adjacent the contoured portion, wherein the palm-receiving portion of the printer housing is concave between the front portion and the rear portion, a strap connected to the printer housing and capable of passing around the back of the user's hand, wherein the palm-receiving portion is disposed between the front and rear portions, in order to provide a housing so as to conveniently fit into an open palm of a person intending to use the data terminal (see column 5 lines 4-8, of Hanson) and to prevent an operator from accidentally dropping the terminal (see column 6 lines 30-35, of Hanson).

7. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al as modified by the admitted prior art and Sherman et al. *five Goodwin et al*

The teachings of Fukumoto et al as modified by the admitted prior art and Sherman et al have been discussed above.

Fukumoto et al as modified by the admitted prior art and Sherman et al fails to specifically teach the housing having a pair of opposed connected substantially mirror-image housing sections, wherein each housing section includes one of the flanges.

Goodwin et al teaches a portable printer (10) including a housing (11) having a pair of opposed connected substantially mirror-image housing sections (35 and 36) (see figures 1-3 and column 3 lines 11-3).

In view of Goodwin et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al as modified by the admitted prior art and Sherman et al, the housing

having a pair of opposed connected substantially mirror-image housing sections, thereby providing each housing section with one of the flanges, in order to easily allow insertion of the internal components during manufacturing.

8. Claims 44, 45, 66, 67, 69, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al as modified by the admitted prior art, Sherman et al, and Goodwin et al as applied to claim 43 above, and further in view of Austin et al (US 6,068,420, previously cited).

Fukumoto et al as modified by the admitted prior art, Sherman et al, and Goodwin et al fails to specifically teach a printer printed circuit board supported by the housing sections, wherein the print module is mounted on the printer circuit board, wherein the mirror-image housing sections receive the printed circuit board.

Austin et al teaches a portable printer (10), comprising: an elongate housing having a front portion, a rear portion, the housing providing space for receiving a roll of a label web (30), an elongate printed circuit board (40), received by the housing and supported within the housing, and a print module (38) being mounted to the circuit board at the rear portion of the housing (see figures 3, 4, column 3 lines 50-65, column 4 lines 12-21, column 7 lines 65-66).

In view of Austin et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al as modified by the admitted prior art, Sherman et al, and Goodwin et al, a printer printed circuit board supported by the housing sections, wherein the print module is mounted on the printer circuit board, wherein the mirror-image housing

sections receive the printed circuit board, in order to provide a secure electrical connection between the components of the system, and to avoid the need for a print head cable by mounting the print head directly on the circuit board (see column 7 lines 65-66).

9. Claims 46, 57-60, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al as modified by the admitted prior art, Sherman et al, Goodwin et al, and Austin et al further in view of McKinnon et al (US 6,202,642, previously cited).

The teachings of Fukumoto et al as modified by the admitted prior art, Sherman et al, Goodwin et al, and Austin et al have been discussed above.

While Fukumoto et al teaches a battery (49) within the printer housing (see figure 5), Fukumoto et al as modified by the admitted prior art, Sherman et al, Goodwin et al, and Austin et al fails to specifically teach at least one battery being mounted on the printed circuit board, the battery being at the front portion of the housing, a plurality of adjacent batteries, a separator between each pair of adjacent batteries, the separators being secured to the printer circuit board.

McKinnon et al teaches an elongate printed circuit board (2700), a plurality of adjacent batteries (2704) mounted on the printed circuit board at the front portion of a housing (bottom 2708, top 2724), a separator (2712) between each pair of adjacent batteries, and the separators being secured to the printed circuit board (see figure 27 and column 13 lines 54-60).

In view of McKinnon et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al as modified by the admitted prior art, Sherman et al, Goodwin et al, and Austin et al, at least one battery being mounted on the printed circuit board, the battery being at the front portion of the housing, a plurality of adjacent batteries, a separator between each pair of adjacent batteries, the separators being secured to the printer circuit board, in order to securely mount the batteries within the housing.

10. Claims 47-49 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al as modified by the admitted prior art and Sherman et al as applied to claim 37 above, and further in view of Austin and McKinnon et al.

Fukumoto et al also teaches the portable data entry device including an elongate data entry device housing having a front end, a scanner (2) disposed on the front end of the data entry device housing for scanning a code (not shown), a display (4) and a plurality of manually operable keys (5), the scanner being capable of receiving data through the end of the compartment (the scanner extends through an open portion of the front end) (see figures 1, 2, and 4).

Fukumoto et al as modified by the admitted prior art and Sherman et al fails to specifically teach a printer printed circuit board supported within the housing, wherein the print module is mounted on the printer circuit board.

The teachings of Austin et al have been discussed above.

In view of Austin et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by

Fukumoto et al as modified by the admitted prior art and Sherman et al, a printer printed circuit board supported within the housing, wherein the print module is mounted on the printer circuit board, in order to provide a secure electrical connection between the components of the system, and to avoid the need for a print head cable by mounting the print head directly on the circuit board (see column 7 lines 65-66).

While Fukumoto et al teaches a battery (49) within the printer housing (see figure 5), Fukumoto et al as modified by the admitted prior art, Sherman et al, and Austin et al fails to specifically teach at least one battery being mounted on the printed circuit board.

The teachings of McKinnon et al have been discussed above.

In view of McKinnon et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al as modified by the admitted prior art and Sherman et al, at least one battery being mounted on the printed circuit board, in order to provide a secure electrical connection between the components of the system, and to securely mount the batteries within the housing.

11. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al as modified by the admitted prior art and Sherman et al as applied to claim 37 above, and further in view of Texas Instruments Inc. (assignee) (NL 174772 B, abstract only).

Fukumoto et al as modified by the admitted prior art and Sherman et al fails to specifically teach the printer weighing less than 16 ounces.

Texas Instruments Inc. teaches a portable printer which weighs 220 grams (which is less than 8 ounces) (see the title).

In view of Texas Instruments Inc.'s teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al as modified by the admitted prior art and Sherman et al, the printer weighing less than 16 ounces, in order to provide a light weight printer, thereby providing easy portability and preventing user fatigue.

12. Claims 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto et al as modified by the admitted prior art and Sherman et al in view of Austin et al.

The teachings of Fukumoto et al as modified by the admitted prior art and Sherman et al have been discussed above. Fukumoto et al also teaches the portable data entry device including an elongate data entry device housing having a front end, a scanner (2) disposed on the front end of the data entry device housing for scanning a code (not shown), a display (4) and a plurality of manually operable keys (5), the scanner being capable of receiving data through the end of the compartment (the scanner extends through an open portion of the front end) (see figures 1, 2, and 4).

Fukumoto et al as modified by the admitted prior art and Sherman et al fails to specifically teach a printer printed circuit board disposed in the housing, the printer printed circuit board having a front portion and a rear portion, the print module mounted to the rear portion of the printer circuit board.

The teachings of Austin et al have been discussed above.

In view of Austin et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Fukumoto et al as modified by the admitted prior art and Sherman et al, a printer printed circuit board disposed in the housing, the printer printed circuit board having a front portion and a rear portion, the print module mounted to the rear portion of the printer circuit board, in order to provide a secure electrical connection between the components of the system, and to avoid the need for a print head cable by mounting the print head directly on the circuit board (see column 7 lines 65-66).

Allowable Subject Matter

13. Claims 68 and 71 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 73-76 have been allowed over the prior art of record.

15. The following is a statement of reasons for the indication of allowable subject matter and reasons for allowance:

While the Austin et al teaches a printed circuit board (40) disposed in and supported by a housing (see figures 3 and 4), and Goodwin et al teaches the use of mirror-image housing sections, the prior art of record, taken alone or in combination, fails to teach or fairly suggest: the mirror-image housing sections including slots which receive the printer circuit board, in combination with the other claimed limitations, as set forth in the claims.

While Sherman et al (US 5,110,226, previously cited) teaches a portable printer (24), comprising: a housing (33), at least one battery (106) in the housing, an access opening in the housing to the inside of the housing, the battery being accessible through the access opening, and a door (110) for the opening movable between closed and open positions (see figures 1-3, and column 7 lines 9-31), the prior art of record, taken alone or in combination, fails to teach or fairly suggest: the access opening in the housing between the compartment and the inside of the housing, in combination with the other claimed limitations, as set forth in the claims.

The access opening as taught by Sherman et al is on the bottom of the housing, not located within a channel-shaped compartment that is adapted to receive a data entry device. Therefore, there is no motivation (other than applicants) for one of ordinary skill in the art at the time of the invention to combine the teachings of the prior art in a manner so as to create the claimed invention.

Response to Arguments

16. Applicant's arguments with respect to claims 37-67, 69, 70, and 72 have been considered but are moot in view of the new ground(s) of rejection.

17. In response to applicant's arguments against the references individually (see pages 2-7 of the amendment filed on 8/23/2002), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Collins, Jr. et al (US 5,142,131) teaches a hand-held bar code reader having a contoured housing and a strap to fit around the back of the user's hand. Torii (JP 2002-151858 A) teaches a hand-held printer with a strap attached to the housing, the strap fitting around the back of a user's hand.

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared J. Fureman whose telephone number is (703) 305-0424. The examiner can normally be reached on 7:00 am - 4:30 PM M-T, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



jjf
November 18, 2002



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